



2084

- EDITORIAL, *C. LOVIS*
- HOSPITAL OF THE FUTURE, *M. KEEN*
- FUTURE MEDICINE, TODAY'S HEALTHCARE, *S. HEINEMANN*
- LET'S CHANGE BEFORE WE HAVE TO, *M. CABRER*
- SMART CONTRACTS IN HEALTHCARE, *S. JANIN*
- PATIENT HEALTHCARE PORTALS, *M. PETERSEN*
- LABS OF THE FUTURE
- FUTURE OF AUGMENTED REALITY IN HEALTHCARE, *D. MADISON*
- CHALLENGES, OPPORTUNITIES OF TOMORROW'S RADIOLOGIST, *D. HILMI*
- UTILITY OF ARTIFICIAL INTELLIGENCE IN RADIOLOGY, *R. VIDAL-PEREZ*

TOP HEALTHCARE TRENDS
2018

THE FUTURE OF MEDICINE
BOOK, *P. BRONSON ET AL*

VISIONARY LEADERSHIP,
D. CORTESE ET AL

WOMEN IN RADIOLOGY,
S. BAKER

ROBOTICS: A CHANGE

MANAGEMENT CASE STUDY,
L. ROBSON

AWARD-WINNING 'DOCTORS'
ASSISTANTS', *S. MCNALLY
ET AL*

3D PRINTING AT THE JACOBS
INSTITUTE: AN UPDATE,
P. MARCUCCI

DEEP INTEROPERABILITY IN
HEALTHCARE *C. BUCKLEY,*

VIRTUAL REALITY CLINIC: A
CASE STUDY, *B. WIEDERHOLD*

MACHINE LEARNING FOR
BRAIN TUMOUR DETECTION,
D. CORONADO

ARE RANKINGS THE BEST
WAY TO DETERMINE
HEALTHCARE SYSTEMS?
A. LAYLAND ET AL



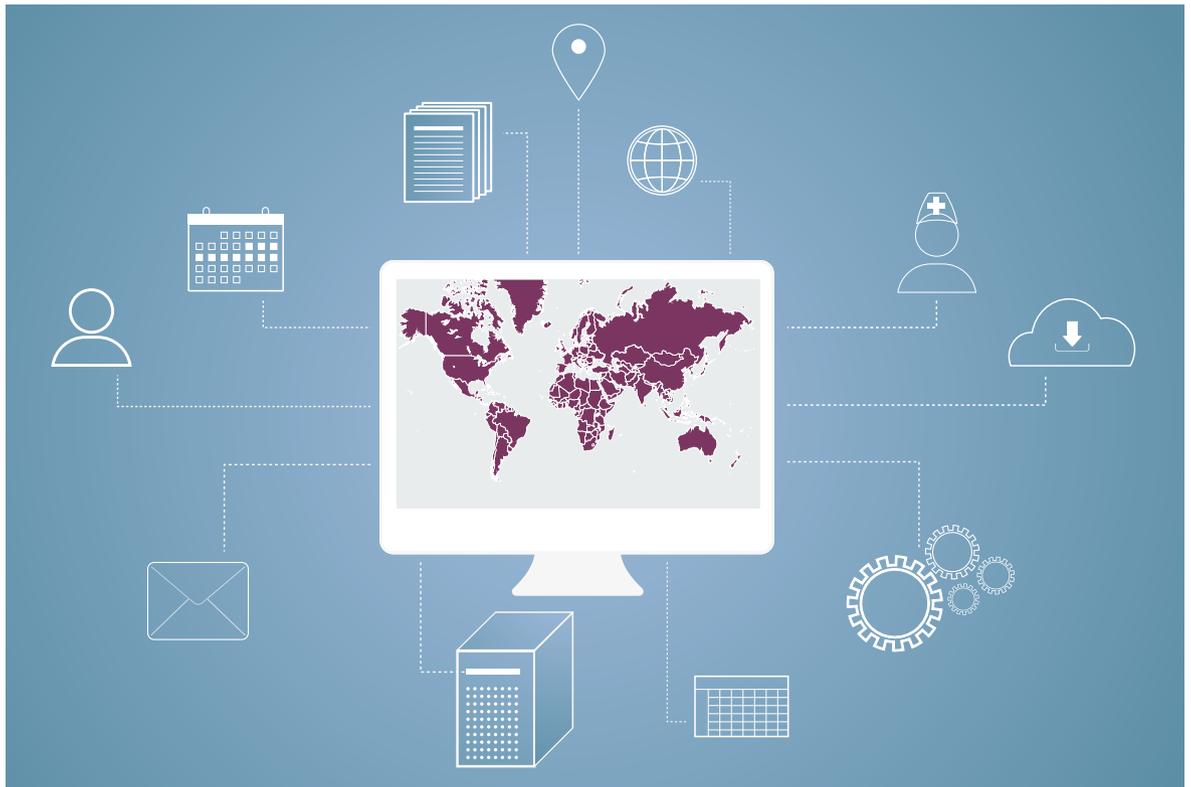
Deep interoperability in healthcare

The view from KLAS on the state of data access for better care

According to a report by research body KLAS, “deep operability” has doubled but 86 percent of healthcare organisations have yet to report success. HealthManagement.org spoke with report co-author Colin Buckley on what this means for healthcare.



Colin Buckley
 Director of Research Strategy
 KLAS Research, USA
 colin.buckley@klasresearch.com
 @KLASresearch
 klasresearch.com



Can you define ‘deep interoperability’?

There are many different ways that one could measure interoperability progress. Frequently, metrics are rather technical in nature. They might include the number of data-sharing connections between organisations or the number of documents transferred from one location to another over a period of time or even the number of organisations or systems that are certified as compliant to some interoperability standard.

The challenge with these metrics is that they don’t get to the ultimate goal of interoperability: ensuring

that individual clinicians can access meaningful data that improves patient care. To measure this, KLAS interviewed clinical and IT leadership about their clinicians’ experience across four stages:

- How often do clinician have electronic access to the outside data sources they need?
- When accessing outside data, how easy is it to locate specific patient records?
- To what degree is outside data integrated with clinicians’ EMR workflow?
- Once retrieved and viewed, how impactful is outside data for patient care?

Within the scope of this study, “deep interoperability” is a designation for organisations that have achieved an ideal state across all four stages of interoperability. That is, clinicians can reach data sources nearly always or often, they can easily or automatically locate specific patient records, they can view the data inside their EMR workflow and the data is nearly always or frequently impactful.

What is your snapshot view on the state of interoperability in healthcare? What are the challenges and opportunities?

We found that provider organisations often do well in two or three of these stages, but when we narrow the field to those that are successful in all four stages the number is quite small: only 14 percent of those interviewed in our 2017 research fit the “deep interoperability” description when accessing data from outside organisations using different EMRs.

On the bright side, this is a significant improvement over our 2016 benchmark result of 6 percent. A more critical view, however, says there is a long way to go before we reach a place where the ideal is commonplace.

Our research highlighted many different challenges, large and small. I would highlight two overarching ones:

First, interoperability is expensive. Organisations speak most often about the cost of interfaces, but there are a whole range of technological and personnel expenses needed to create meaningful data sharing. Because of this, interoperability progress largely depends on the existence of specific business cases for each participating organisation in order to justify the expense. This is why some public Electronic Health Information Exchanges (HIEs) have sustainability problems: they don’t always solve the specific needs of the specific organisations that are asked to fund them.

An opportunity here is for HIT vendors to deliver more cost-effective interoperability solutions that lower the bar for justifying investment by provider organisations. In our research, vendors that build interoperability tools directly into their EMRs and provide low-cost access to shared networks see greater interoperability progress among customers. Examples would include Epic’s CareEverywhere HIE and the multi-vendor CommonWell network. The latter is still in its early growth stage, but providers say it is promising.

Second, the data we share is often not helpful

to clinicians. Even when data moves freely between provider organisations, clinicians too often find that they are overloaded with static care summaries that contain pages and pages of disorganised patient data. Often, they don’t have time to comb through it all in order to find the few nuggets of information that they need. The most common culprits, providers say, are Continuity of Care Documents and Clinical Document Architecture standards that are too broad and too flexible.

This is going to be a difficult problem to solve as it will take a great deal of focused cooperation between providers and vendors. A possible helper may be the Fast Healthcare Interoperability Resources (FHIR) Application Programming Interface standard. It is being implemented into EMRs and other interoperability solutions, but actual use of FHIR to solve these data format and integration issues is still experimental at this point. In the meantime, it’s likely that we will see continuation of a trend highlighted in our recent report: provider organisations are making progress on the first three interoperability stages, but hitting a wall when it comes to positive impact on patient care.

“ ONLY 14 PERCENT OF PROVIDER ORGANISATIONS FIT THE “DEEP INTEROPERABILITY” DESCRIPTION WHEN ACCESSING DATA FROM OUTSIDE ORGANISATIONS USING DIFFERENT EMRS ”

Where would you like to see the healthcare interoperability situation five years from now?

KLAS really isn’t in a position to predict where we will be five years from now, but it’s pretty safe to say that interoperability will not be solved in the immediate future—if by “solved” we mean that most organisations have achieved the ideal of “deep interoperability”. In many ways, interoperability is not a technology problem. In fact, we could say that providers and vendors have not caught up with the technology that already exists. It will take years to implement and refine the options that we already have.

How could data be streamlined to improve deep interoperability?

Aside from less expensive technology options, providers would like their tools to be “smarter.” For example, instead of having to interrupt patient care

in order to search for outside data, they would like their EMRs to recognise the patient they are working with and the context of the problem they are trying to solve and then search outside sources in the background. If data is found, the EMR could extract only the most relevant pieces and alert the clinician of its availability. Today, that type of artificial intelligence is extremely rare.

What are some of the risks connected with sub-standard deep interoperability?

To put it simply, the risk is that nothing will change. The problems we need interoperability to solve are not new—they are just becoming more obvious. Interoperability can help lower costs, improve treatments, increase safety, and can ultimately deepen the engagement of patients in maintaining their health. If we don't make progress with interoperability, these goals will be difficult to reach.

“ IT'S PRETTY SAFE TO SAY THAT INTEROPERABILITY WILL NOT BE SOLVED IN THE IMMEDIATE FUTURE—IF BY “SOLVED” WE MEAN THAT MOST ORGANISATIONS HAVE ACHIEVED THE IDEAL OF “DEEP INTEROPERABILITY ”

How does healthcare compare with other sectors (eg, finance) when it comes to deep interoperability standards?

This is not an area of expertise for KLAS, but it's clear that interoperability in healthcare is a very complex problem. When it comes to a typical financial transaction, the volume of data is often small and is always very well defined. In healthcare, clinicians often don't know for any one patient what data is available or would even be useful to their current diagnosis and treatment. As suggested previously, we are seeing progress on the technical aspects of moving whole documents from one point to another rather than discrete data elements. The sharing of health data, today, is more akin to transmitting a painting: it takes a human on the receiving end to determine its meaning and value.

What steps can healthcare organisations take to improve deep interoperability in their organisations? Would staff training be a part of any moves towards improvement?

At a fundamental level, organisations could explore what their opportunities are. That includes collaboration with partners and competitors in their regions to determine where and how the sharing of data would benefit their patients and their organisations. This would naturally lead to conversations with EMR and other HIT vendors about what their technology options are. Providers should hold their vendors accountable for the promises they make in their contracts and marketing materials. Transparency around how well vendors perform for their customers is the heart of what KLAS does—sharing feedback with KLAS is a way providers can help move the industry forward.

User training is definitely helpful in making the most of interoperability tools. Today, many clinicians are completely unaware of the access they already have in place. With training and experience clinicians can become more consistent and efficient in finding and using outside data. In addition, the interaction with end users that happens during training can also help IT staff better understand how tools might be reconfigured or customised to better meet needs. Training for end users should also be part of early discussions with vendors who don't always understand the important role they can play in driving user adoption—and thus value for their customers. ■

KEY POINTS



- ✓ Interoperability progress is generally not allowing outside data access for better patient care
- ✓ KLAS defines “deep interoperability” as one where organisations have achieved an ideal state across four key stages of interoperability
- ✓ In 2017, only 14 percent of provider organisations met the “deep interoperability” criteria, although the figure was up from 2016
- ✓ Making shared data impactful is the chief obstacle
- ✓ Providers report the most common culprits are CCD/C-CDA document standards which they say are too flexible
- ✓ Deep interoperability can help lower costs and increase healthcare efficiency
- ✓ The biggest risk is that nothing will change in the face of substandard deep interoperability
- ✓ User training would help boost interoperability in healthcare facilities